Engineering Evaluation
West County Wastewater District
Application # 5652
Plant # 14152

BACKGROUND

West County Wastewater District has applied for an Authority to Construct/Permit to Operate:

S-1 Standby Emergency Diesel Generator, 350 kW, with Cummins 350DQBB Genset

The generator set will be used to provide electricity in case of an electric blackout and with their emergency fire pump.

EMISSIONS CALCULATIONS

The emission factors used to estimate emissions from the Cummins engine , S-1, described above are from manufacture's data. S-1 failed the Risk Sceen Test at 100 hrs/yr operation (results enclosed). Therefore, to pass the Risk Screen Test, S-1 will be limited to a maximum of 83 hours for non-emergency use per year . Therefore, maximum annual output is: 83 hr/yr X 535 BHP = 44,405 BHP-hr/yr.

Pollutant	Emission Factor (gr/BHP-hr)	Annual Emissions (ton/yr)
PM-10	0.10	0.005
POC	1.0	0.05
Nitrogen Oxides	6.90	0.34
Carbon Monoxide	8.5	0.42

PLANT CUMULATIVE EMISSIONS

PM =0.005 TPY
POC=0.05 TPY
NOx=0.34 TPY
CO =0.42 TPY

TOXICS RISK SCREENING ANALYSIS

A Toxics Risk Screening Analysis was required for diesel engine exhaust. A risk screening analysis was performed for estimated emissions from 100 hours of operation per year. The maximum cancer risk was found to be 12 in a million, and not acceptable under the District's risk management policy. The District Toxics Section recommended the following to reduce risk to an acceptable level:

1. For an engine that meets TBACT, limit the hours of operation to no more than 83 hours per year, excluding periods when operation is required due to emergency conditions.
2. Install a diesel particulate filter that can reduce diesel particulate emissions to a level equivalent to TBACT or switch to an engine that meets the TBACT requirement. The maximum cancer risk is ten in a million for engines with TBACT control.

Since the S-1 generator set is being installed expressly to use only during periods of electricity blackout, the applicant has agreed to limit usage to 83 hours per year for each engine, excluding periods of operation due to emergency conditions. Thus, this project will now comply with the District's Toxic Risk Management Policy by resulting in an increased cancer risk to the maximally exposed individual of less than ten in a million.

STATEMENT OF COMPLIANCE

A Best Available Control Technology (BACT) review is required for any new or modified source which results in a cumulative emissions increase for POC, NPOC, NO_x, SO2, PM10, or CO of greater than 10 pounds per highest day since April 5, 1991, or which results in a cumulative increase since 1982, which exceeds the emission rate of a pollutant listed in Regulation 2-2-301.2. S-1 will likely emit less than 10 pounds of pollutants per highest day. Therefore, BACT is not required.

The project is considered to be ministerial under District's CEQA Regulation 2-1-311 and therefore is not subject to CEQA review. The engineering review for this project requires only the application of standard permit conditions and standard emission factors (MOP Chapter 2.3) and therefore is not discretionary as defined by CEQA.

Offset credits must be provided for any new or modified source of POC or NO_x emissions at facilities which emit more than 15 tons per year of these pollutants. The District may provide offsets for facilities with POC or NO_x emissions between 15 and 50 tons per year as long as the facility has no available offset credits and all existing sources of POC and/or NO_x are equipped with Best Available Retrofit Control Technology (BARCT). Total facility emissions, including this project, will be less than 15 tons per year of POC or NO_x. Therefore, offsets are not required.

S-1 is subject to the requirements of Regulations 6-301(Ringelmann No. 1 Limitation), 6-302 (Opacity Limitation), 6-305 (Visible Particles), and 6-310 (Particulate Weight Limitation).

S-1 is subject to and in compliance with the requirements of Regulations 9-1-301 (Limitations on Ground Level Concentrations), 9-1-302 (General Emission Limitation), and 9-1-304 (Fuel Burning – Liquid and Solid Fuels).

S-1 is exempt from the requirements of 9-8-301 and 302 pursuant to the low usage limited exemption of Regulation 9-8-111.

S-1 is within 1000 feet of the Seaview Elementary School located at 2000 Southwood Dr., San Pablo, CA. As per Reg. 3-318 (Waters bill requirements), this application is subject to the public notice requirements.

BACT, Offsets, PSD, NSPS, NESHAPs do not apply to this application.

PERMIT CONDITIONS

1. The S-1 engine is subject to the requirements of Regulation 9, Rule 1 ("Sulfur Dioxide"), Regulation 6 ("Particulate and Visible Emissions"), and Regulation 9, Rule 8 ("NOx and CO from Stationary Internal Combustion Engines"). [basis: Regulation 9, Rule 1; Regulation 6]

2. The owner/operator shall not operate S-1 for more than 83 hours in any consecutive 12 month period, excluding periods when operation is required due to emergency conditions. [basis: Regulation 2, Rule 1; Toxic Risk Screen]

3. The owner/operator shall equip S-1 with a non-resettable totalizing counter which records hours of operation. [basis: Recordkeeping]

4. The owner/operator of S-1 shall maintain the following monthly records in a District-approved log for at least 2 years and the records shall be made available to the District upon request:

    1) total hours of operation for S-1
    2) hours of operation due to emergency conditions.
    [basis: Recordkeeping]

RECOMMENDATIONS

It is recommended the Authority to Construct be waived and a Permit to Operate be issued for:

S-1 Standby Emergency Diesel Generator, 350 kW, with Cummins 350DQBB Genset

by: _____ Date: _____
Air Quality Engineer II